

EXHIBIT 8

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1 IN THE UNITED STATES DISTRICT COURT
2 FOR THE NORTHERN DISTRICT OF CALIFORNIA
3 SAN JOSE DIVISION
4 ---oO---

5 PATRICK CALHOUN, et al.,)
6 on behalf of themselves and)
7 all others similarly)
8 situated,)
9)
10)

11 Plaintiffs,) Case No.
12) 5:20-cv-5146-LHK-SVK
13 vs.)
14))
15 GOOGLE LLC,)
16))
17 Defendant.)
18))

19 CHASOM BROWN, et al.,)
20 on behalf of themselves and)
21 all others similarly)
22 situated,)
23)
24 Plaintiffs,) Case No.
25) 5:20-cv-03664-LHK
26 vs.)
27))
28 GOOGLE LLC,)
29))
30 Defendant.)
31))

32 ---oO---

33 Videotaped Zoom Deposition of
34 HUEI-HUNG (CHRIS) LIAO
35 CONFIDENTIAL, ATTORNEYS' EYES ONLY
36 Friday, December 3, 2021
37 ---oO---

38 Katy E. Schmidt
39 RPR, RMR, CRR, CSR 13096
40 Veritext Job No.: 4962198

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<p>1 IN THE UNITED STATES DISTRICT COURT 2 FOR THE NORTHERN DISTRICT OF CALIFORNIA 3 SAN JOSE DIVISION 4 ---oo---</p> <p>5 PATRICK CALHOUN, et al.,) on behalf of themselves and) 6 all others similarly) situated,) 7 Plaintiffs,) Case No 8 vs) 5:20-cv-5146-LHK-SVK 9) GOOGLE LLC,) 10) Defendant) 11 _____) CHASOM BROWN, et al.,) 12 on behalf of themselves and) all others similarly) 13 situated,)) 14 Plaintiffs,) Case No) 5:20-cv-03664-LHK 15 vs)) GOOGLE LLC,) 16) Defendant) 17 _____) 18 BE IT REMEMBERED that, pursuant to Notice, and 19 on Friday, the 3rd day of December, 2021, commencing at the hour of 9:05 a m , thereof, in Sunnyvale, 20 California, before me, KATY E SCHMIDT, a Certified Shorthand Reporter in and for the County of Yolo, State 21 of California, there virtually personally appeared 22 HUEI-HUNG (CHRIS) LIAO 23 called as a witness herein, who, being by me first duly sworn, was thereupon examined and interrogated as 24 hereinafter set forth 25</p>	<p>1 APPEARANCES CONTINUED: 2 Also present: 3 David West, Videographer 4 Ryan McGee, In-house counsel 5 Toni Baker, In-house counsel 6 ---oo---</p> <p>7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25</p>																																														
<p>Page 2</p> <p>1 APPEARANCES: 2 For The Plaintiffs: 3 (Appeared via Zoom) 4 BLEICHMAR FONTI & AULD LLP BY: LESLEY WEAVER, Esq 5 555 12th Street, Suite 1600 Oakland, California 994607 6 415 445 4003 lweaver@bfalaw.com 7 (Appeared via Zoom) 8 SIMMONS HANLY CONROY BY: JASON "JAY" BARNES, Esq BY: AN TRUONG, Esq 10 One Court Street Alton, Illinois 62002 11 618 693 3104 jaybarnes@simmonsfirm.com 12 (Appeared via Zoom) 13 BOIES SCHILLER FLEXNER LLP BY: MARK MAO, Esq BY: BEKO RICHARDSON, Esq 15 BY: ERIKA NYBORG-BURCH, Esq 44 Montgomery Street, 41st Floor 16 San Francisco, California 94104 415 293 6800 17 mmao@bsflp.com 18 For The Defendants: 19 (Appeared via Zoom) 20 Quinn Emanuel Urquhart & Sullivan LLP BY: JOSEF ANSORGE, Esq 21 BY: TRACY GAO, Esq 51 Madison Avenue, 22nd Floor 22 New York, New York 10010 212 849 7000 23 josefansorge@quinnemanuel.com 24 /// 25 ///</p>	<p>Page 4</p> <p>1 INDEX OF EXAMINATION 2 ---oo---</p> <table> <thead> <tr> <th style="text-align: right;">Page</th> <th style="text-align: right;">Line</th> </tr> </thead> <tbody> <tr> <td style="text-align: right;">4</td> <td style="text-align: right;">Examination by Mr. Mao</td> </tr> <tr> <td style="text-align: right;">5</td> <td style="text-align: right;">Examination by Mr. Ansorge</td> </tr> <tr> <td style="text-align: right;">6</td> <td style="text-align: right;">---oo---</td> </tr> <tr> <td style="text-align: right;">7</td> <td></td> </tr> <tr> <td style="text-align: right;">8</td> <td style="text-align: right;">QUESTIONS INSTRUCTED NOT TO ANSWER</td> </tr> <tr> <td style="text-align: right;">9</td> <td></td> </tr> <tr> <td style="text-align: right;">10</td> <td style="text-align: right;">Page Line</td> </tr> <tr> <td style="text-align: right;">11</td> <td></td> </tr> <tr> <td style="text-align: right;">12</td> <td style="text-align: right;">(NOTHING OFFERED.)</td> </tr> <tr> <td style="text-align: right;">13</td> <td style="text-align: right;">---oo---</td> </tr> <tr> <td style="text-align: right;">14</td> <td></td> </tr> <tr> <td style="text-align: right;">15</td> <td></td> </tr> <tr> <td style="text-align: right;">16</td> <td></td> </tr> <tr> <td style="text-align: right;">17</td> <td></td> </tr> <tr> <td style="text-align: right;">18</td> <td></td> </tr> <tr> <td style="text-align: right;">19</td> <td></td> </tr> <tr> <td style="text-align: right;">20</td> <td></td> </tr> <tr> <td style="text-align: right;">21</td> <td></td> </tr> <tr> <td style="text-align: right;">22</td> <td></td> </tr> <tr> <td style="text-align: right;">23</td> <td></td> </tr> <tr> <td style="text-align: right;">24</td> <td></td> </tr> <tr> <td style="text-align: right;">25</td> <td></td> </tr> </tbody> </table> <p>Page 3</p> <p>Page 5</p>	Page	Line	4	Examination by Mr. Mao	5	Examination by Mr. Ansorge	6	---oo---	7		8	QUESTIONS INSTRUCTED NOT TO ANSWER	9		10	Page Line	11		12	(NOTHING OFFERED.)	13	---oo---	14		15		16		17		18		19		20		21		22		23		24		25	
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<p>1 BY MR. MAO: 12:53 2 Q. Good afternoon, Mr. Liao. 12:53 3 If I can trouble you to pull Exhibit No. 4. 12:53 4 Thank you. 12:53 5 A. Exhibit No. 4. 12:53 6 Q. Yeah. It's the "Ads Identity & 12:53 7 Infrastructure" document again. 12:53 8 A. I have it. 12:53 9 Q. If you don't mind going to page 11, which is 12:53 10 on the bottom 24. It should be -- let's see -- that 12:53 11 page. I know it's a very long document. 12:53 12 A. I have it. 12:53 13 Q. Okay. Great. 12:54 14 By the way, were you the author or one of the 12:54 15 authors of this presentation? 12:54 16 A. Yes. 12:54 17 Q. On the top right there, what exactly is an 12:54 18 identity handler? 12:54 19 A. I believe I created this slide, but I borrowed 12:54 20 some graphics created earlier by other people. And the 12:54 21 diagrams containing the identity handler was one of the 12:54 22 graphics I borrowed. 12:54 23 In this case, I think identity handlers refers 12:54 24 to what eventually became [REDACTED] 12:54 25 Q. Got it. 12:54</p>	<p style="text-align: right;">Page 122</p>
<p>1 And so this is an older -- this is the old 12:54 2 original serving model and not the current [REDACTED] serving 12:54 3 model. 12:54 4 Is that right? Or do I have that wrong? 12:54 5 A. As I stated, I did not create the graphics on 12:55 6 this particular slide. So I think some of the graphics 12:55 7 does look outdated, including referring -- having 12:55 8 referred to [REDACTED] with a different name. 12:55 9 Q. Okay. But I think what you're trying to -- 12:55 10 what you were trying to show in the middle column of 12:55 11 these three columns is that the identity handler -- 12:55 12 A. Oh, that's my Nest thermal detector auto 12:55 13 testing. I apologize for the disruption. 12:55 14 Q. Oh, no worries. I've had that happen before 12:55 15 with my Nest. 12:55 16 That middle column, were you trying to show 12:55 17 with that middle column that the identity handler is 12:55 18 handling data that goes into the stack from both I guess 12:56 19 P-logs and B-logs? 12:56 20 MR. ANSORGE: Objection. Vague. 12:56 21 THE WITNESS: I believe the middle diagram is 12:56 22 [REDACTED]</p>	<p style="text-align: right;">Page 123</p> <p>13 So I think you were asked about this 12:59 14 yesterday, if you don't mind going down to page -- 12:59 15 sorry. My .pdf number is not coming up for some 12:59 16 reason -- page 13. 12:59 17 A. Page 13. 12:59 18 Q. Which is 26 on the bottom. 12:59 19 A. 26. I have it. 12:59 20 Q. It's -- yeah. It's this chart, this one that 12:59 21 you were asked about yesterday. 01:00 22 A. I have it. 01:00 23 Q. Yep. Great. 01:00 24 So with regard to this chart, I guess are 01:00 25 Gaia cookies and Biscotti cookies here in the middle and 01:00</p>

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1 also PPID on the right there, are these all external 01:00
 2 signals -- I'm sorry -- signal -- identity signals 01:00
 3 coming in from the external world? 01:00
 4 A. Yes. 01:00
 5 Q. And that is getting parsed on the top right 01:00
 6 where it says the "Parsing Layer." And where does [REDACTED] 01:00
 7 sit in this chart? 01:00
 8 A. In this chart, [REDACTED] is represented by the 01:00
 9 larger bounding box containing the individual smaller 01:00
 10 boxes. 01:00
 11 Q. Got it. Okay. 01:00
 12 So [REDACTED] is the bigger gray box covering all the 01:01
 13 yellow boxes. 01:01
 14 And I guess are you trying to convey that it's 01:01
 15 ingesting the different identity signals coming in from 01:01
 16 the external world to move downward in the process in 01:01
 17 terms of what comes out? 01:01
 18 MR. ANSORGE: Objection. Vague and form. 01:01
 19 BY MR. MAO: 01:01
 20 Q. I'm just trying to understand literally what 01:01
 21 you're trying to convey with this graph. 01:01
 22 A. The graph is trying to describe the 01:01
 23 internal -- some of the internal components of [REDACTED] by 01:01
 24 their logical functional grouping. 01:01
 25 Q. Ah. Got it. 01:01

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1 [REDACTED] 01:00
 2 [REDACTED] 01:00
 3 [REDACTED] 01:00
 4 [REDACTED] 01:00
 5 [REDACTED] 01:00
 6 [REDACTED] 01:00
 7 [REDACTED] 01:00
 8 [REDACTED] 01:00
 9 [REDACTED] 01:00
 10 [REDACTED] 01:00
 11 [REDACTED] 01:00
 12 [REDACTED] 01:00
 13 [REDACTED] 01:00
 14 [REDACTED] 01:00
 15 [REDACTED] 01:00
 16 [REDACTED] 01:00
 17 [REDACTED] 01:00
 18 Q. Got it. Okay. That's super helpful. Thank 01:04
 19 you so much. 01:04
 20 (Plaintiffs' Exhibit 25 was 01:04
 21 marked for identification.) 01:04
 22 BY MR. MAO: 01:04
 23 Q. If you don't mind, I had introduced into 01:04
 24 Exhibit -- let me just make sure I have the right number 01:04
 25 here. Sorry. It should be Exhibit No. 25. Would you 01:04
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1 And then if you move down one more page, and 01:01
 2 you were asked about this as well yesterday, which is 01:01
 3 page 13, and on the bottom it should be 27. 01:01

4 A. 27. 01:02
 5 Q. Yeah. 01:02
 6 A. I have it. 01:02
 7 Q. Yep. This one? 01:02
 8 A. Yes. 01:02
 9 Q. [REDACTED] [REDACTED]

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1 mind pulling that? 01:04
 2 A. Exhibit 25. 01:04
 3 Q. I think it's [REDACTED]. 01:04
 4 A. I have it. 01:04
 5 Q. Yeah. Take some time to familiarize yourself 01:04
 6 with it. 01:04
 7 And my first question to you is basically 01:04
 8 going to be have you seen this before? 01:04
 9 A. I don't recall seeing it. I may have been 01:05
 10 present in the room the presentation was given, but I 01:05
 11 have no recollection at this moment. 01:05
 12 Q. Got it. 01:05
 13 Would you mind going to page 4, which is 59 on 01:05
 14 the bottom right? 01:05
 15 A. Can I take a brief moment to read through -- 01:05
 16 Q. Of course. Please. Please do. Thank you so 01:05
 17 much. 01:05
 18 A. Okay. 01:06
 19 Q. I'm still at page -- sorry. Not complaining 01:06
 20 about the deposition software -- page 3 on the bottom 01:06
 21 right. 01:06
 22 A. Page 3. 01:06
 23 Q. Yeah. Bottom right. It would be 59. 01:06
 24 A. 59. 01:06
 25 Q. Yes. 01:06

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1 THE WITNESS: As far as I'm aware -- and I do 01:18
 2 not know the specific implementation of the Chrome 01:18
 3 header in question here. 01:18
 4 But my general understanding is incognito mode 01:18
 5 does not carry this header. I do not know if the 01:18
 6 opposite is true or not. 01:18
 7 BY MR. MAO: 01:18
 8 Q. Got it. 01:18
 9 So are there not other ways that can be custom 01:18
 10 built to signal to [REDACTED] that, hey, this is incognito 01:18
 11 traffic? 01:18
 12 MR. ANSORGE: Objection. Form. 01:18
 13 THE WITNESS: As I stated earlier, there isn't 01:18
 14 a reliable signal that we are aware of that can be used 01:18
 15 to infer incognito mode. And as a result, I cannot 01:19
 16 think of a way of building a mechanism to reliably 01:19
 17 detect incognito mode. 01:19
 18 BY MR. MAO: 01:19
 19 Q. At least from the [REDACTED] side; right? Or is your 01:19
 20 opinion also opining on whether or not Chrome can be 01:19
 21 built to convey that this is incognito mode? 01:19
 22 A. I cannot speak for Chrome. 01:19
 23 Q. Even though you're not a Chrome engineer, you 01:19
 24 would agree with me that surely Chrome can be built to 01:19
 25 signal that something is in incognito mode, wouldn't you 01:19

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1 Do I understand your questions correctly? 01:20
 2 Q. Yes. We can answer it in that order. That's 01:20
 3 perfectly fine. 01:20
 4 Let's start with the logs and then let's start 01:21
 5 with [REDACTED] ability in that role. 01:21
 6 A. As I stated before, we do not have a reliable 01:21
 7 signal to infer incognito mode at this time we receive 01:21
 8 an ad query. And as a result, we are also unable to 01:21
 9 infer incognito mode using the same set of signals from 01:21
 10 the logs. 01:21
 11 Q. So you would have no way of looking at the 01:21
 12 logs and knowing what is incognito mode traffic to be 01:21
 13 removed, if I needed to remove incognito traffic or not. 01:21
 14 Isn't that correct? 01:21
 15 A. To the best of my knowledge, there exists no 01:21
 16 way to definitively know the incognito state of a given 01:21
 17 ad query. 01:21
 18 Q. If the Court were in this case to order Google 01:21
 19 to delete all log entries containing incognito traffic, 01:21
 20 at least sitting from the perspective of the head of 01:22
 21 product of [REDACTED] is there a way in which you can see 01:22
 22 within your purview of how we go about doing that? 01:22
 23 MR. ANSORGE: Objection. Form. Vague. And 01:22
 24 incomplete hypothetical. 01:22
 25 THE WITNESS: Because of the lack of reliable 01:22
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1 agree? 01:19
 2 MR. ANSORGE: Objection. Form. Foundation. 01:19
 3 THE WITNESS: I do not have the necessary 01:19
 4 knowledge to assess that statement. 01:19
 5 BY MR. MAO: 01:19
 6 Q. Okay. So then let me ask you the opposite. 01:19
 7 As a result of that, how would [REDACTED] when it's 01:19
 8 looking at the traffic that has already been generated, 01:19
 9 know whether or not something was in incognito mode? 01:19
 10 MR. ANSORGE: Objection. Vague. Form. 01:19
 11 BY MR. MAO: 01:20
 12 Q. Let me give you a better example, something a 01:20
 13 little more clear. 01:20
 14 If I were to say I wanted to delete all 01:20
 15 entries of logs in the ad query log, for example, that 01:20
 16 we had just looked at, that were generated as a result 01:20
 17 of being somebody in X -- somebody in incognito mode, 01:20
 18 am I able to use [REDACTED] to identify those entries and 01:20
 19 delete it from the logs? 01:20
 20 A. I think there are two parts to your question, 01:20
 21 and the first part is whether or not it is technically 01:20
 22 feasible to detect incognito from the logs. 01:20
 23 And the second part of your question was 01:20
 24 whether or not UIS can be the place to -- for that to 01:20
 25 happen? 01:20

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